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WADDEY & PATTERSON 414 UNION STREET, SUITE 2020 BANK OF AMERICA PLAZA NASHVILLE, TN 37219			WOO, RICHARD SUKYOON	
			ART UNIT	PAPER NUMBER
			3639	

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/736,555

Applicant(s)

HOLLIS

Examiner

Richard Woo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-73 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-73 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

- 1) The applicant's amendment filed on November 4, 2004 has been entered.
- 2) Applicant's argument filed on November 4, 2004 with respect to the 101 rejections has been fully considered but is not persuasive.

Claim 31 is directed to a computer readable medium that contains a program code. Indeed, the invention has been recognized under State Street case, and the examiner agrees to the applicant's argument that the invention can produce a useful, concrete and tangible result. However, the applicant has failed to see the rationale behind the current 35 U.S.C. 101 rejections. Although the computer program stored in the CD-ROM, floppy disc, or any other known computer readable medium can produce the useful, concrete and tangible result, the CD-ROM, floppy disc or the medium itself cannot produce any result until the readable medium is in connection with the data processing system and the program therein is actually executed by the processor. The examiner notes that there is clearly a distinction between a simple computer readable medium containing the program code and an enhanced computer readable medium that can execute a certain function with or without being connected to the data processing system.

For example, Apple's I-Pod can be both used as the computer readable medium and the data processing system that can show photographs, play MP3 songs, store other digital files, record voice and perform many other functions. Conversely, a regular flash drive - data storage device, or a portable hard drive cannot perform any function

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by itself although it looks similar to the Apple's I-Pod. Claim 31 is merely directed to a computer readable medium and the applicant cannot assert that the invention can be performed like Apple's I-Pod (performing any function by itself, self-powered).

Additionally, although the applicant's exhibit shows other patents with format similar to the applicant's, those patents were not examined by the current examiner and this examiner's view (the applicant should add "when executed by a processor") is largely shared with other examiners in the business method area (Class 705).

3) Applicant's arguments, filed November 4, 2004, with respect to 35 U.S.C. 102 or 103 rejections have been fully considered and are persuasive. The corresponding rejections of the previous office action have been withdrawn.

***Claim Rejections - 35 USC § 102***

4) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5) Claims 31, 38-40, 43-46, 52-53, 55-61, 65-66, 69, and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 09-62729 (hereinafter JP'729).

As for Claim 31, JP'729 discloses a program comprising:

a CAD file analysis program for receiving a CAD file and analyzing the CAD file to determine one or more manufacturing criteria corresponding to each custom manufacturing part (see Fig. 1, abstract (English)); and

a price generation program (1310) for generating a price quotation based upon the one or more manufacturing criteria (see Id.).

As for Claim 38, JP'729 further discloses the program including a feature selection program for allowing a user of the program to select one or more features for the parts being quoted (see paragraph [0087], Fig. 7 and abstract).

As for Claim 39, JP'729 further discloses the program, wherein the features include material, process and surface finish (see Id.).

As for Claim 40, JP'729 further discloses the program, wherein the feature selection program allows a user to select one of a plurality of manufacturing process to be used to manufacture the parts (see Id.).

As for Claim 43, JP'729 further discloses the program, wherein the criteria include volume of each part, geometric extents of each part along multiple axes, and surface area of each part (see paragraph [0087]).

As for Claim 44, JP'729 further discloses the program, wherein the criteria includes identification of 3-D geometric features relevant to a difficulty of a process (see Id.).

As for Claim 45, JP'729 further discloses the program, wherein the 3-D geometric features include at least one feature selected from the (parting lines, undercuts,

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pockets, protrusion, wall thickness, surface features and sold features.) (see Figs. 3, 5, 9, 11, 13 of JP'729).

As for Claim 46, JP'729 further discloses the program including an order generation program for assembling all electronic files corresponding to a price quotation into a single directory for transmission to a supplier responsible for the quotation (see 140 in Fig. 1).

As for Claim 52, JP'729 discloses a method comprising:

loading onto a computer a CAD file describing the customer manufactured part (see Fig. 1, abstract (English));

analyzing the CAD file on the system without human intervention to determine one or more manufacturing criteria for the part (see Id.);

calculating a firm price quotation for the part based on the one or more criteria (see 1310 in Fig. 1, Supra paragraph [0087]); and

displaying the price quotation (see monitor in Fig. 1).

As for Claim 53, JP'729 further discloses the method wherein calculating step is performed substantially instantly with a preprogrammed pricing formula (see the cost estimate module (1310)).

As for Claim 55, JP'729 further discloses the method including: prior to the calculating step, permitting a user to select one of a plurality of available manufacturing process;

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and wherein the calculating step includes calculating the price quotation for the selected process (see paragraph [0087], Fig. 7 and abstract).

As for Claim 56, JP'729 further discloses the method, wherein in analyzing step, the criteria includes volume of the part (see Supra paragraph; the bigger the volume, the more expansive).

As for Claim 57, JP'729 further discloses the method, wherein in analyzing step, the criteria includes the geometric extent of the part along multiple axes (see Supra paragraph [0087] and Figs.).

As for Claim 58, JP'729 further discloses the method, wherein in analyzing step, the criteria includes surface area of the part (see Id.).

As for Claim 59, JP'729 further discloses the method including: prior to calculating step, selecting one of a plurality of available materials; and wherein the calculating step includes calculating the price quotation for the selected material (see Supra paragraph [0087] and Figs.).

As for Claim 60, JP'729 further discloses the method including: prior to calculating step, permitting the client to select one or a plurality of available surface finishes; wherein in analyzing step, the criteria include surface area of the part; and wherein in calculating step, the price quotation is dependent upon the selected surface finish and the surface area (see Id.).

As for Claim 61, JP'729 further discloses the method including: prior to calculating step, permitting the client to select a quantity of the part grater than one, wherein the

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calculating step includes calculating the price quotation for the selected quantity, wherein the quantity price per unit is less than the price for a single unit (see *Id.*).

As for Claim 65, JP'729 further discloses the method, wherein the criteria includes identification of 3-D geometric features relevant to a difficulty of the process (see *Supra* paragraph and Figs.).

As for Claim 66, JP'729 further discloses the method, wherein the 3-D geometric features include at least one feature selected from (parting lines, undercuts, pockets, protrusions, wall thickness, surface features and solid features) (see Figs. 3, 5, 9, 11, 13 of JP'729).

As for Claim 69, JP'729 further discloses the method, wherein the computer system includes one and only one computer (see Fig. 1).

As for Claim 72, JP'729 discloses a method comprising:

loading onto a computer a CAD file describing the customer manufactured part (see Fig. 1, abstract (English));

analyzing the CAD file on the system without human intervention to determine one or more manufacturing criteria for the part (see *Id.*); and

calculating a firm price quotation for the part based on the one or more criteria (see 1310 in Fig. 1, *Supra* paragraph [0087]).



***Claim Rejections - 35 USC § 103***

7) The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8) Claims 33-37 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'729.

As for Claims 33-37 and 54, JP'729 discloses the invention as recited earlier, but does not expressly disclose the method wherein the pricing formula is in the form:  $\text{Price} = a*V + b*H + c$ .

At the time the invention was made, it would have been an obvious to a person of ordinary skill in the art to formulate and utilize any formula to calculate the manufacturing cost because Applicant has not disclosed that the applicant's formula provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with JP'729 because JP'729 can also output the costs calculated by the various estimating means.

Therefore, it would have been obvious to one having ordinary skill in the art at the invention was made to modify JP'729 to include the pricing formula is in the form:  $\text{Price} = a*V + b*H + c$ , for the purpose of generating the price quotation of the project.

9) 32 and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'729 in view of EP 1,112,828 (hereinafter EP).

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As for Claim 32, JP'729 discloses the invention as recited earlier, but does not expressly disclose that the CAD file is an STL file.

EP teaches, for a method for manufacturing for CAD, that the method includes the CAD file that can be converted to STL file

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to convert CAD file into the STL file, as taught by EP, for the purpose of providing the negative of the prototype to be built in a stereo-lithographic machine.

As for Claims 41-42, JP'729 discloses the invention as recited earlier, but does not expressly disclose the plurality of manufacturing process including:

stereo lithography; selective laser sintering; fused deposition modeling; at least one additive manufacturing process; and at least one formative manufacturing process.

EP teaches, for a method for manufacturing for CAD, that the method includes: the manufacturing process including: molding, plastic injection, deposition, stereo-lithographic and so forth.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to include the manufacturing process including stereo

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lithography; selective laser sintering; fused deposition modeling; at least one additive manufacturing process; and at least one formative manufacturing process, as taught by EP, for the purpose of providing the well-known manufacturing processes that allow the reproduction of the CAD drawings.

10) 47-51, 54, and 62-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 09-62729 (JP'729) in view of JP 09-114873 (hereinafter JP'873).

As for Claim 47, JP'729 discloses the invention as recited earlier, but does not expressly disclose the program including a buildset grouping program for grouping a plurality of parts making up a buildset into a plurality of subsets of parts, each subset being of a size that will fit upon an available platform area of a selected machine.

JP'873 teaches, for a volume calculation apparatus for 3D components defined using CAD, that the apparatus includes the buildset grouping program for grouping a plurality of parts making up a buildset into a plurality of subsets of parts, each subset being of a size that will fit upon an available platform area of a selected machine (see abstract (English) and Figs.).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to include the buildset grouping program for grouping a plurality of parts making up a buildset into a plurality of subsets of parts, each subset being of a size that will fit upon an available platform area of a selected machine, as

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taught by JP'873, for the purpose of calculating volume of the object component at high speed with high precision.

As for Claim 48, JP'729 discloses the invention as recited earlier, but does not expressly disclose the price generation program calculating a price quotation for each subset, and sums the subset price quotations to generate a price quotation for the entire buildset.

JP'873 teaches, for a volume calculation apparatus for 3D components defined using CAD, that the apparatus includes the buildset grouping program for grouping a plurality of parts making up a buildset into a plurality of subsets of parts, each subset being of a size that will fit upon an available platform area of a selected machine (see abstract (English) and Figs.).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of JP'729 such that the invention includes the price generation program calculating a price quotation for each subset, and sums the subset price quotations to generate a price quotation for the entire buildset, by using the volume calculation system of JP'873, because the component data already contains the relevant information regarding each component such as the material, size and unit price of the component, for the purpose of generating a price quotation for the entire buildset.

As for Claims 49 and 63, JP'729 discloses the invention as recited earlier, but does not expressly disclose the buildset grouping program determining a platform area required by each part, orders the parts from largest to least required platform area, and selects the largest parts sequentially to make-up the subsets.

JP'873 teaches, for a volume calculation apparatus for 3D components defined using CAD, that the apparatus includes the buildset grouping program for grouping a plurality of parts making up a buildset into a plurality of subsets of parts, each subset being of a size that will fit upon an available platform area of a selected machine (see abstract (English) and Figs.).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of JP'729 to include the buildset grouping program determining a platform area required by each part, order the parts from largest to least required platform area, and select the largest parts sequentially to make-up the subsets, as taught by JP'873, for the purpose of determining the platform area and volume required by each part at high speed with high precision.

As for Claim 50, JP'729 discloses the invention as recited earlier, but does not expressly disclose a buildset grouping program for grouping a plurality of parts making up the buildset into a plurality of subsets of parts, each subset being of a size that fit into an available volume of a selected machine.

JP'873 teaches, for a volume calculation apparatus for 3D components defined using CAD, that the apparatus includes the buildset grouping program for grouping a plurality of parts making up a buildset into a plurality of subsets of parts, each subset being of a size that will fit upon an available platform area of a selected machine (see abstract (English) and Figs.).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of JP'729 to include a buildset grouping program for grouping a plurality of parts making up the buildset into a plurality of subsets of parts, each subset being of a size that fit into an available volume of a selected machine, as taught by JP'873, for the purpose of calculating volume required by the buildset at high speed with high precision.

As for Claim 62, JP'729 discloses the invention as recited earlier, but does not expressly disclose the method including:

determining a platform area required by each part of the buildset and determining a total platform area required by the buildset;

comparing the total platform area required by the buildset to an available platform area of a manufacturing machine to determine whether the entire buildset will fit on the platform;

if the entire buildset will not fit on the platform, dividing the buildset into a plurality of subsets;

wherein the calculating step further includes calculating a firm price quotation for each subset, and summing the subset price quotations to provide a firm price quotation for the entire buildset.

JP'873 teaches, for a volume calculation apparatus for 3D components defined using CAD, that the apparatus includes the buildset grouping program for grouping a plurality of parts making up a buildset into a plurality of subsets of parts, each subset being of a size that will fit upon an available platform area of a selected machine (see abstract (English) and Figs.).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of JP'729 to include the processes of: determining a platform area required by each part of the buildset and determining a total platform area required by the buildset; comparing the total platform area required by the buildset to an available platform area of a manufacturing machine to determine whether the entire buildset will fit on the platform; if the entire buildset will not fit on the platform, dividing the buildset into a plurality of subsets; wherein the calculating step further includes calculating a firm price quotation for each subset, and summing the subset price quotations to provide a firm price quotation for the entire buildset, as taught by JP'873, for the purpose of generating a price quotation for the entire buildset.

As for Claims 51 and 64, JP'729 discloses the invention as recited earlier, but does not expressly disclose the method including:

a buildset grouping program portion for determining X, Y, Z components for a rectangular box space enclosing each part of a plurality of parts making up a buildset and for then optimizing an arrangement of the parts within the available volume, wherein the price generation program portion includes overall height of the buildset as one of the one or more manufacturing criteria.

JP'873 teaches, for a volume calculation apparatus for 3D components defined using CAD, that the apparatus includes the buildset grouping program for grouping a plurality of parts making up a buildset into a plurality of subsets of parts, each subset being of a size that will fit upon an available platform area of a selected machine (see abstract (English) and Figs.).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of JP'729 to include a buildset grouping program portion for determining X, Y, Z components for a rectangular box space enclosing each part of a plurality of parts making up a buildset and for then optimizing an arrangement of the parts within the available volume, wherein the price generation program portion includes overall height of the buildset as one of the one or more manufacturing criteria, as taught by JP'873, for the purpose of calculating volume required by the buildset at high speed with high precision.



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11) Claims 1-7, 13, 16-24, 30, 67-68, 70-71, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'729 in view of Ruffo et al. (US 2001/0032166).

As for Claim 1, JP'729 discloses a method comprising:

permitting a client to access a system (see Fig. 1; abstract (English));

uploading a CAD file describing the custom manufactured part (see 141 in Fig.

1);

analyzing the CAD file on the server to determine one or more manufacturing criteria for the part (see the cost developers 139, 1310 in Fig. 1); and

calculating a firm price quotation for the part based on one or more criteria (see Supra abstract).

However, JP'729 does not expressly disclose the invention in the Internet environment or computer network.

Ruffo et al. teaches, for a system and method for a custom manufactured part or tool in the computer network environment, including:

uploading from the client computer to the server a CAD file describing the custom manufactured part (see Fig. 10 for the CAD file);

analyzing the CAD file on the server to determine one or more manufacturing criteria for the part (see Supra paragraphs and [0015], [0016], [0017], [0018], [0020], [0074]);

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calculating a firm price quotation for the part based on one or more criteria (see Supra paragraphs; Inherently, every vendor who is manufacturing the custom part MUST calculate the price quotation based on one or more criteria); and transmitting the price quotation to the client (see Supra paragraphs).

Since Ruffo et al. and JP'729 are both from the same field of endeavor, the purpose disclosed by Ruffo et al. would have been well recognized in the pertinent field of JP'729.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the computer network with computer terminals, databases and external communications into the system of JP'729 such that the buyer or client can receive the quotation from the various vendors, as taught by Ruffo et al., for the purpose of providing the customer with the procurement system for the custom order products by automating, streamlining the process of generating custom order requests for quotations and purchase orders, selecting vendors, distributing quotation requests and evaluating the requests.

As for Claim 2, the modified method of JP'729 further discloses the method wherein calculating step is performed substantially instantly with a preprogrammed pricing formula (see the cost estimate module (1310) of JP'729).

As for Claim 3-6, the modified method of JP'729 discloses the invention as recited earlier, but does not expressly disclose the method wherein the pricing formula is in the form:  $\text{Price} = a*V + b*H + c$ .

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to formulate and utilize any formula to calculate the manufacturing cost because Applicant has not disclosed that the applicant's formula provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with JP'729 because JP'729 can also output the costs calculated by the various estimating means.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify JP'729 to include the pricing formula is in the form:  $\text{Price} = a*V + b*H + c$ , for the purpose of generating the price quotation of the project.

As for Claim 7, the modified method of JP'729 further discloses the method including: prior to the calculating step, permitting the client to select one of a plurality of available manufacturing process (see Supra paragraphs in Ruffo et al.; based on the cost and service); and wherein the calculating step includes calculating the price quotation for the selected process (see Figs. of JP'729 and Ruffo et al.).

As for Claims 13 and 16, the modified method of JP'729 further discloses the method, wherein the one or more manufacturing criteria includes volume of the part (see Figs. of JP'729; bigger the volume, more expensive inherently).

As for Claim 17, the modified method of JP'729 further discloses the method, wherein in the analyzing step, the one or more criteria includes the geometric extent of the part along multiple axes (see Supra paragraph [0087] of JP'729).

As for Claim 18, the modified method of JP'729 further discloses the method, wherein in the analyzing step, the criteria includes surface area of the part (see Id.).

As for Claim 19, the modified method of JP'729 further discloses the method, wherein in the analyzing step, the criteria includes the geometric extent of the part along multiple axes (see Id.).

As for Claim 20, the modified method of JP'729 further discloses the method, wherein in the analyzing step, the criteria includes surface area of the part (see Figs. of JP'729).

As for Claim 21, the modified method of JP'729 further discloses the method, including: prior to calculating step, selecting one of a plurality of available materials; and wherein the calculating step includes calculating the price quotation for the selected material (see Supra paragraph [0087] of JP'729).

As for Claim 22, the modified method of JP'729 further discloses the method, including: prior to the calculating step, permitting the client to select one of a plurality of available surface finishes; in the analyzing step, the criteria includes surface area of the

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part; and in the calculating step, the price quotation is dependent on the selected surface finishes and the surface area (see paragraph [0087] of JP'729).

As for Claim 23, the modified method of JP'729 further discloses the method including permitting the client to purchase the custom manufacture part online based upon the price quotation (see Supra paragraphs and Figs. of Ruffo et al.).

As for Claim 24, the modified method of JP'729 further discloses the method, including: prior to the calculating step, permitting the client to select a quantity of the part grater than one; and the calculating step includes calculating the price quotation for the selected quantity, wherein the quantity price per unit is less than the price for a single unit (see Supra paragraph of JP'729).

As for Claim 29, the modified method of JP'729 further discloses the method, wherein the criteria includes identifications of 3-D geometric features relevant to a difficulty of the process (see Supra paragraph [0087] of JP'729).

As for Claim 30, the modified method of JP'729 further discloses the method, wherein the 3-D geometric features include at least one feature selected from (parting lines, undercuts, pockets, protrusions, wall thickness, surface features and solid features) (see Figs. 3, 5, 9, 11, 13 of JP'729).

As for Claims 67-68, JP'729 does not expressly disclose the invention in the Internet environment or computer network.

Ruffo et al. teaches, for a system and method for a custom manufactured part or tool in the computer network environment.

Since Ruffo et al. and JP'729 are both from the same field of endeavor, the purpose disclosed by Ruffo et al. would have been well recognized in the pertinent field of JP'729.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the computer network with computer terminals, databases and external communications into the system of JP'729 such that the buyer or client can receive the quotation from the various vendors, as taught by Ruffo et al., for the purpose of providing the customer with the procurement system for the custom order products by automating, streamlining the process of generating custom order requests for quotations and purchase orders, selecting vendors, distributing quotation requests and evaluating the requests.

As for Claims 70-71 and 73, JP'729 discloses a method comprising:

- permitting a client to access a system (see Fig. 1; abstract (English));
- loading a CAD file describing the custom manufactured part (see 141 in Fig. 1);
- analyzing the CAD file on the server to determine one or more manufacturing criteria for the part (see the cost developers 139, 1310 in Fig. 1); and
- calculating a firm price quotation for the part based on one or more criteria (see Supra abstract).

However, JP'729 does not expressly disclose the invention in the Internet environment or computer network.

Ruffo et al. teaches, for a system and method for a custom manufactured part or tool in the computer network environment, including:

uploading from the client computer to the server a CAD file describing the custom manufactured part (see Fig. 10 for the CAD file);

analyzing the CAD file on the server to determine one or more manufacturing criteria for the part (see Supra paragraphs and [0015], [0016], [0017], [0018], [0020], [0074]);

calculating a firm price quotation for the part based on one or more criteria (see Supra paragraphs; Inherently, every vendor who is manufacturing the custom part MUST calculate the price quotation based on one or more criteria); and

transmitting the price quotation to the client (see Supra paragraphs).

Since Ruffo et al. and JP'729 are both from the same field of endeavor, the purpose disclosed by Ruffo et al. would have been well recognized in the pertinent field of JP'729.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the computer network with computer terminals, databases and external communications into the system of JP'729 such that the buyer or client can receive the quotation from the various vendors, as taught by Ruffo et al., for the purpose of providing the customer with the procurement system for the custom order products by automating, streamlining the process of generating

custom order requests for quotations and purchase orders, selecting vendors, distributing quotation requests and evaluating the requests.

12) Claims 8-12, 14-15, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'729 and Ruffo et al., and further in view of EP 1,112,828.

As for Claims 8-12, JP'729 discloses the method as recited earlier, but does not expressly disclose the method including the manufacturing process including: additive manufacturing process, stereo lithography, selective laser sintering, fused deposition modeling, additive manufacturing process and formative manufacturing process.

As for Claims 14-15, the modified method of JP'729 further discloses the method, but does not expressly disclose the method having:

the manufacturing process including the molding of parts from soft rubber tooling created using a platform manufactured by an additive manufacturing process, and injection molding of the parts from thermoplastic material using molds; and the calculating step being performed with a pre-programmed pricing formula which includes a pattern part pricing formula, a tooling pricing formula, and a molded part pricing formula.

EP teaches, for a method for manufacturing for CAD, that the method includes:

the manufacturing process including: molding, plastic injection, deposition, stereo-lithographic and so forth.



It would have been obvious to a person having ordinary skill in the art at the time the invention was made to include the manufacturing process including stereo lithography; selective laser sintering; fused deposition modeling; additive manufacturing process; one formative manufacturing process; the molding; and injection molding, and to calculate the price quotation, as taught by EP, for the purpose of providing the well-known manufacturing processes that allow the reproduction of the CAD drawings.

As for Claim 27, the modified method of JP'729 discloses the invention as recited earlier, but does not expressly disclose that the CAD file is an STL file.

EP teaches, for a method for manufacturing for CAD, that the method includes the CAD file that can be converted to STL file.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to convert CAD file into the STL file, as taught by EP, for the purpose of providing the negative of the prototype to be built in a stereo-lithographic machine.

13) Claims 25-26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'729 and Ruffo et al., and further in view of JP'873.

As for Claim 25, the modified method of JP'729 discloses the invention as recited earlier, but does not expressly disclose the method including:

determining a platform area required by each part of the buildset and determining a total platform area required by the buildset;

comparing the total platform area required by the buildset to an available platform area of a manufacturing machine to determine whether the entire buildset will fit on the platform;

if the entire buildset will not fit on the platform, dividing the buildset into a plurality of subsets;

wherein the calculating step further includes calculating a firm price quotation for each subset, and summing the subset price quotations to provide a firm price quotation for the entire buildset.

JP'873 teaches, for a volume calculation apparatus for 3D components defined using CAD, that the apparatus includes the buildset grouping program for grouping a plurality of parts making up a buildset into a plurality of subsets of parts, each subset being of a size that will fit upon an available platform area of a selected machine (see abstract (English) and Figs.).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of JP'729 to include the processes of: determining a platform area required by each part of the buildset and determining a total platform area required by the buildset; comparing the total platform area required by the buildset to an available platform area of a manufacturing machine to determine whether

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the entire buildset will fit on the platform; if the entire buildset will not fit on the platform, dividing the buildset into a plurality of subsets; wherein the calculating step further includes calculating a firm price quotation for each subset, and summing the subset price quotations to provide a firm price quotation for the entire buildset, as taught by JP'873, for the purpose of generating a price quotation for the entire buildset.

As for Claim 26, the modified method of JP'729 discloses the invention as recited earlier, but does not specifically disclose that the dividing step includes ordering the parts from largest to least required platform area; and selecting the largest parts sequentially to make-up the subsets.

JP'873 teaches, for a volume calculation apparatus for 3D components defined using CAD, that the apparatus includes the buildset grouping program for grouping a plurality of parts making up a buildset into a plurality of subsets of parts, each subset being of a size that will fit upon an available platform area of a selected machine (see abstract (English) and Figs.).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of JP'729 to include the buildset grouping program determining a platform area required by each part, order the parts from largest to least required platform area, and select the largest parts sequentially to make-up the subsets, as taught by JP'873, for the purpose of determining the platform area and volume required by each part at high speed with high precision.

As for Claim 28, the modified method of JP'729 discloses the invention as recited earlier, but does not expressly disclose the method including:

a buildset grouping program portion for determining X, Y, Z components for a rectangular box space enclosing each part of a plurality of parts making up a buildset and for then optimizing an arrangement of the parts within the available volume, wherein the price generation program portion includes overall height of the buildset as one of the one or more manufacturing criteria.

JP'873 teaches, for a volume calculation apparatus for 3D components defined using CAD, that the apparatus includes the buildset grouping program for grouping a plurality of parts making up a buildset into a plurality of subsets of parts, each subset being of a size that will fit upon an available platform area of a selected machine (see abstract (English) and Figs.).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of JP'729 to include a buildset grouping program portion for determining X, Y, Z components for a rectangular box space enclosing each part of a plurality of parts making up a buildset and for then optimizing an arrangement of the parts within the available volume, wherein the price generation program portion includes overall height of the buildset as one of the one or more manufacturing criteria, as taught by JP'873, for the purpose of calculating volume required by the buildset at high speed with high precision.

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**Conclusion**

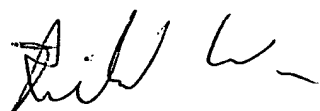
14) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 2002/0026385 is cited to show a method for selecting a part from a CAD and generating an electronic purchase order for the part using a display of CAD drawing in a client/server network.

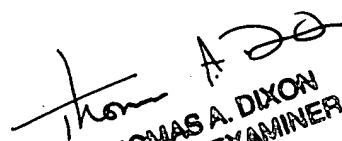
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Woo whose telephone number is 571-272-6813. The examiner can normally be reached on Monday-Friday from 8:30 AM -5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Weiss can be reached on 571-272-6812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Art Unit 3639  
April 28, 2005



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